

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 January 2004 (29.01.2004)

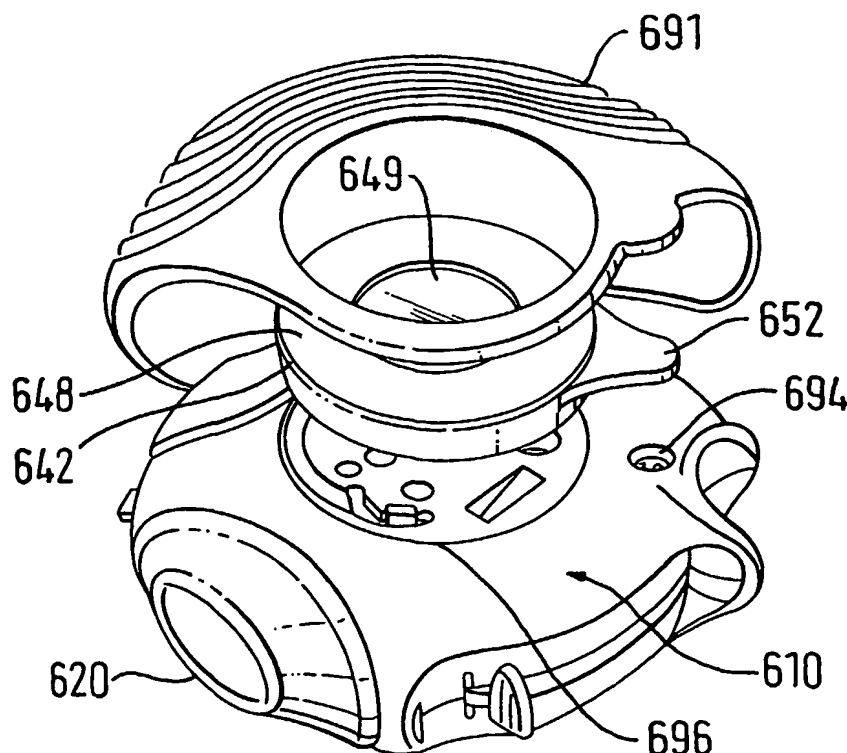
PCT

(10) International Publication Number
WO 2004/009470 A3

- (51) International Patent Classification⁷: **B65D 83/04**
- (21) International Application Number:
PCT/EP2003/007937
- (22) International Filing Date: 17 July 2003 (17.07.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
0216831.8 19 July 2002 (19.07.2002) GB
- (71) Applicant (for all designated States except US): **GLAXO GROUP LIMITED** [GB/GB]; Glaxo Wellcome House, Berkeley Avenue, Greenford, Middlesex UB6 0NN (GB).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **ANDERSON, Gregor, John, McLennan** [GB/GB]; GlaxoSmithKline, Park Road, Ware, Hertfordshire SG12 0DP (GB).
- (74) Agent: **THOMPSON, Clive, Beresford**; GlaxoSmithKline, Corporate Intellectual Property (CN925.1), 980 Great West Road, Brentford, Middlesex TW8 9GS (GB).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— with international search report

[Continued on next page]

(54) Title: **MEDICAMENT DISPENSER**



(57) Abstract: There is provided a medicament dispenser for use with a medicament carrier having multiple distinct medicament doses carried thereby and an internal mechanism for dispensing the distinct medicament doses carried by said medicament carrier. The mechanism comprises receiving means for receiving the medicament carrier; release means for releasing a distinct medicament dose from the medicament carrier on receipt thereof by said receiving means; an outlet (620), positioned to be in communication with the medicament dose releasable by said release means; indexing means for individually indexing the distinct medicament doses of the medicament carrier; and counting means (649) for counting each time a distinct medicament dose of the medicament carrier is indexed by said indexing means. The counting means is a distinct electronic counter unit that is reversibly receivable by the medicament dispenser.

WO 2004/009470 A3



(88) Date of publication of the international search report:

8 April 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/EP 03/07937

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B65D83/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B65D A61M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|--|
| X Y | US 6 360 739 B1 (GODFREY JAMES WILLIAM ET AL) 26 March 2002 (2002-03-26) column 2, line 47 -column 7, line 20; figures 1,7 | 1,2,5,6, 9-12,14 3,4,7,8, 15, 20-22,24 |
| X | WO 86 02275 A (DRACO AB) 24 April 1986 (1986-04-24) page 7, line 4 - line 7; figure 5 | 16,17,19 |
| X | WO 01 17597 A (STRAUB MARIANN ;GREENWOOD MARK H (US); SAPPHIRE DESIGNS INC (US)) 15 March 2001 (2001-03-15) column 11, line 29 - line 45 | 18 |
| | -/- | |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

10 December 2003

Date of mailing of the international search report

07.01.04

Name and mailing address of the ISA

European Patent Office, P.B. 6818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Bevilacqua, V

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/07937

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| P,X | GB 2 372 543 A (BESPAK PLC) 28 August 2002 (2002-08-28) page 5, line 21 - line 23; claim 14; figures 1,2 --- | 16,17,19 |
| Y | WO 01 41846 A (BONNEY STANLEY GEORGE ;DAVIES MICHAEL BIRSHA (GB); JONES ANTHONY P) 14 June 2001 (2001-06-14) page 34, line 5 - line 25 page 39, line 4 - line 25; figure 1 --- | 20-22,24 |
| A | --- | 23,25 |
| Y | US 5 544 647 A (EBELING FREDERICK A ET AL) 13 August 1996 (1996-08-13) figures 1,5 --- | 3,4,15 |
| Y | US 6 029 659 A (O'CONNOR JAMES A) 29 February 2000 (2000-02-29) figure 5 --- | 7,8 |
| A | "LE DISTRIBUTEUR A RUBAN DISKUS" ANNALES FRANCAISES DE CHRONOMETRIE ET DE MICROTECHNIQUE, OBSERVATOIRE DE BESANCON. BESANCON, FR, vol. 47, 1998, pages 97-105, XP000830919 ISSN: 0294-1228 page 99; figure VUE --- | 1 |
| A | US 2002/066451 A1 (DAVIES MICHAEL BIRSHA ET AL) 6 June 2002 (2002-06-06) paragraph '0051! ----- | 1 |

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP 03/07937

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-15

A medicament dispenser for use with a medicament carrier having multiple distinct medicament doses carried thereby, comprising:

indexing means and counting means for counting each time a distinct medicament dose of the medicament carrier is indexed by said indexing means

wherein said counting means is provided as a distinct electronic counter unit that is reversibly receivable by the medicament dispenser

2. Claims: 16-25

A medicament dispenser for use with a medicament carrier having multiple distinct medicament doses carried thereby, comprising indexing means and analogue counting means for counting each time a distinct medicament dose of the medicament carrier is indexed by said indexing means and manipulating means to manipulate an analogue count indicium provided by said analogue counting means

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/07937

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---------------------|----------------------------|---------------------|
| US 6360739 | B1 | 26-03-2002 | |
| | | AT 251481 T | 15-10-2003 |
| | | AU 741693 B2 | 06-12-2001 |
| | | AU 8213798 A | 30-12-1998 |
| | | BR 9809554 A | 20-06-2000 |
| | | DE 69818819 D1 | 13-11-2003 |
| | | EP 0988077 A1 | 29-03-2000 |
| | | JP 2000513633 T | 17-10-2000 |
| | | US 2002195102 A1 | 26-12-2002 |
| | | AP 1126 A | 05-12-2002 |
| | | AT 215389 T | 15-04-2002 |
| | | AU 741218 B2 | 29-11-2001 |
| | | AU 8213898 A | 30-12-1998 |
| | | AU 742913 B2 | 17-01-2002 |
| | | AU 8436498 A | 30-12-1998 |
| | | BR 9809980 A | 01-08-2000 |
| | | BR 9809983 A | 01-08-2000 |
| | | CN 1265601 T | 06-09-2000 |
| | | DE 69804609 D1 | 08-05-2002 |
| | | DE 69804609 T2 | 12-09-2002 |
| | | DK 986412 T3 | 22-07-2002 |
| | | EA 1396 B1 | 26-02-2001 |
| | | EG 21520 A | 28-11-2001 |
| | | WO 9856444 A1 | 17-12-1998 |
| | | WO 9856445 A1 | 17-12-1998 |
| | | WO 9856446 A1 | 17-12-1998 |
| | | EP 1163922 A2 | 19-12-2001 |
| | | EP 0988078 A1 | 29-03-2000 |
| | | EP 0986412 A1 | 22-03-2000 |
| | | ES 2175737 T3 | 16-11-2002 |
| | | HK 1023956 A1 | 27-09-2002 |
| | | HR 980304 A1 | 30-04-1999 |
| | | HU 0003328 A2 | 28-02-2001 |
| | | JP 2000513632 T | 17-10-2000 |
| | | JP 2000513634 T | 17-10-2000 |
| | | NO 996085 A | 09-02-2000 |
| | | NZ 501379 A | 26-04-2002 |
| | | PL 337316 A1 | 14-08-2000 |
| | | PT 986412 T | 30-09-2002 |
| | | TR 9903066 T2 | 21-07-2000 |
| | | TW 533865 Y | 21-05-2003 |
| | | US 6474331 B1 | 05-11-2002 |
| | | US 6431168 B1 | 13-08-2002 |
| | | US 2003209239 A1 | 13-11-2003 |
| | | ZA 9804944 A | 08-12-1999 |
| WO 8602275 | A | 24-04-1986 | |
| | | AU 4969885 A | 02-05-1986 |
| | | DE 8590143 U1 | 02-04-1987 |
| | | DK 269086 A | 09-06-1986 |
| | | EP 0197113 A1 | 15-10-1986 |
| | | ES 8701660 A1 | 01-03-1987 |
| | | FI 862440 A | 06-06-1986 |
| | | JP 62500361 T | 19-02-1987 |
| | | NO 862098 A | 27-05-1986 |
| | | PT 81272 A ,B | 01-11-1985 |
| | | WO 8602275 A1 | 24-04-1986 |
| | | ZA 8507761 A | 28-05-1986 |
| WO 0117597 | A | 15-03-2001 | |
| | | US 6516799 B1 | 11-02-2003 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/07937

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|----|---------------------|----------------------------|---------------------|
| WO 0117597 | A | | AU 7121400 A | 10-04-2001 |
| | | | CA 2388958 A1 | 15-03-2001 |
| | | | EP 1229955 A1 | 14-08-2002 |
| | | | JP 2003508166 T | 04-03-2003 |
| | | | WO 0117597 A1 | 15-03-2001 |
| | | | US 2002189611 A1 | 19-12-2002 |
| GB 2372543 | A | 28-08-2002 | EP 1362325 A1 | 19-11-2003 |
| | | | WO 02069253 A1 | 06-09-2002 |
| WO 0141846 | A | 14-06-2001 | AU 2006601 A | 18-06-2001 |
| | | | AU 2509901 A | 18-06-2001 |
| | | | AU 2510001 A | 18-06-2001 |
| | | | AU 2672501 A | 18-06-2001 |
| | | | AU 3007801 A | 18-06-2001 |
| | | | WO 0141845 A1 | 14-06-2001 |
| | | | WO 0141846 A1 | 14-06-2001 |
| | | | WO 0141847 A2 | 14-06-2001 |
| | | | WO 0141848 A1 | 14-06-2001 |
| | | | WO 0141849 A2 | 14-06-2001 |
| | | | EP 1235604 A1 | 04-09-2002 |
| | | | EP 1235606 A1 | 04-09-2002 |
| | | | EP 1235607 A1 | 04-09-2002 |
| | | | EP 1235608 A2 | 04-09-2002 |
| | | | EP 1235609 A2 | 04-09-2002 |
| | | | JP 2003516196 T | 13-05-2003 |
| | | | JP 2003516197 T | 13-05-2003 |
| | | | JP 2003516198 T | 13-05-2003 |
| | | | JP 2003520075 T | 02-07-2003 |
| | | | JP 2003516199 T | 13-05-2003 |
| | | | TW 482689 B | 01-04-2002 |
| | | | US 2002189612 A1 | 19-12-2002 |
| | | | US 2003000524 A1 | 02-01-2003 |
| | | | US 2003079744 A1 | 01-05-2003 |
| | | | US 2003005926 A1 | 09-01-2003 |
| | | | AU 2302802 A | 06-05-2002 |
| | | | WO 0234318 A2 | 02-05-2002 |
| | | | EP 1326668 A2 | 16-07-2003 |
| US 5544647 | A | 13-08-1996 | AT 211399 T | 15-01-2002 |
| | | | AU 687290 B2 | 19-02-1998 |
| | | | AU 4236096 A | 19-06-1996 |
| | | | CA 2181789 A1 | 06-06-1996 |
| | | | DE 69524865 D1 | 07-02-2002 |
| | | | DE 69524865 T2 | 29-08-2002 |
| | | | EP 0746366 A1 | 11-12-1996 |
| | | | ES 2170814 T3 | 16-08-2002 |
| | | | JP 3307946 B2 | 29-07-2002 |
| | | | JP 9508845 T | 09-09-1997 |
| | | | NO 963134 A | 28-08-1996 |
| | | | NZ 297246 A | 22-09-1997 |
| | | | WO 9616686 A1 | 06-06-1996 |
| | | | US 5622163 A | 22-04-1997 |
| | | | ZA 9510129 A | 06-06-1996 |
| US 6029659 | A | 29-02-2000 | NONE | |
| US 2002066451 | A1 | 06-06-2002 | US 6378519 B1 | 30-04-2002 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/07937

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---------------------|----------------------------|---------------------|
| US 2002066451 A1 | | US 6032666 A | 07-03-2000 |
| | | US 5860419 A | 19-01-1999 |
| | | US 5873360 A | 23-02-1999 |
| | | US 5590645 A | 07-01-1997 |
| | | AP 310 A | 07-01-1994 |
| | | AT 401007 B | 28-05-1996 |
| | | AT 43791 A | 15-10-1995 |
| | | AU 675825 B2 | 20-02-1997 |
| | | AU 5926794 A | 16-06-1994 |
| | | AU 645056 B2 | 06-01-1994 |
| | | AU 7202591 A | 05-09-1991 |
| | | BE 1003798 A4 | 16-06-1992 |
| | | BR 9100843 A | 05-11-1991 |
| | | CA 2037421 A1 | 03-09-1991 |
| | | CH 683319 A5 | 28-02-1994 |
| | | CN 1054893 A ,B | 02-10-1991 |
| | | CN 1107687 A ,B | 06-09-1995 |
| | | CZ 283168 B6 | 14-01-1998 |
| | | CZ 9601807 A3 | 16-12-1998 |
| | | CY 2010 A | 20-02-1998 |
| | | CY 2014 A | 20-02-1998 |
| | | CZ 285501 B6 | 11-08-1999 |
| | | DE 4106379 A1 | 05-09-1991 |
| | | DK 37991 A | 03-09-1991 |
| | | ES 2031763 A6 | 16-12-1992 |
| | | FI 911037 A | 03-09-1991 |
| | | FI 990115 A | 21-01-1999 |
| | | FR 2659558 A1 | 20-09-1991 |
| | | FR 2660550 A1 | 11-10-1991 |
| | | GB 2242134 A ,B | 25-09-1991 |
| | | GB 2274273 A ,B | 20-07-1994 |
| | | GR 91100096 A ,B | 30-06-1992 |
| | | HK 18895 A | 17-02-1995 |
| | | HK 19195 A | 17-02-1995 |
| | | HR 940631 A1 | 31-08-1996 |
| | | IE 910698 A1 | 11-09-1991 |
| | | IL 97396 A | 31-12-1995 |
| | | IT 1244655 B | 08-08-1994 |
| | | JP 3110477 B2 | 20-11-2000 |
| | | JP 4220266 A | 11-08-1992 |
| | | KR 210412 B1 | 15-07-1999 |
| | | KR 244004 B1 | 15-03-2000 |
| | | LU 87898 A1 | 16-11-1992 |
| | | NL 9100381 A ,B, | 01-10-1991 |
| | | NO 910836 A | 03-09-1991 |
| | | NO 302929 B1 | 11-05-1998 |
| | | NO 980033 A | 05-01-1998 |
| | | NZ 237274 A | 27-02-1996 |
| | | NZ 260140 A | 27-02-1996 |